We Claim:

    1.   A method of constructing a model generating one or more job performance criteria predictors based on input pre-hire information, the method comprising:

    from a plurality of applicants, electronically collecting pre-hire information from the applicants;

    collecting post-hire information for the applicants based on job performance of the applicants after hire; and

    from the pre-hire information and the post-hire information, generating an artificial intelligence-based predictive model operable to generate one or more job performance criteria predictors based on input pre-hire information from new applicants.

    2.   A computer-readable medium comprising computer-executable instructions for performing the method of claim 1.

    3.   The method of claim 1 further comprising:

    limiting the applicants for the model to those from a particular geographic area; and

    constructing the model as a geographically-specialized model.

    4.   The method of claim 1 further comprising:

    limiting the applicants for the model to those with a particular educational level; and

    constructing the model as an educational level-specialized model.

    5.   The method of claim 1 further comprising:

    limiting the applicants for the model to those with a particular occupation; and constructing the model as an occupationally-specialized model.

6.   The method of claim 1 wherein the model accepts one or more inputs, the method further comprising:

identifying in the pre-hire information one or more characteristics that are ineffective predictors; and

5   omitting the ineffective predictors as inputs to the model.

7.   The method of claim 1 wherein the pre-hire information comprises one or more characteristics, the method further comprising:

identifying in the pre-hire information one or more characteristics that are

10   ineffective predictors; and

providing an indication that the characteristics no longer need to be collected.

8.   The method of claim 1 wherein job performance criteria predictors comprise a predictor indicating whether a job candidate will be voluntarily terminated.

15

9.   The method of claim 1 wherein job performance criteria predictors comprise a predictor indicating whether a job candidate will be eligible for rehire after termination.

20   10.   The method of claim 1 wherein the pre-hire information comprises one or more characteristics, the method further comprising:

identifying in the pre-hire information one or more characteristics that are ineffective predictors; and

responsive to identifying the ineffective predictors, collecting new pre-hire

25   information not including the ineffective predictors; and

building a refined model based on the new pre-hire information.

- 62 -

11.   The method of claim 10 further comprising:

adding one or more new characteristics to be collected when collecting the new pre-hire information.

5   12.   The method of claim 11 further comprising:

evaluating the effectiveness of the new characteristics.

13.   A method of constructing a model predicting employment performance based on a set of input employment parameters, the method comprising:

10   selecting a set of input parameters indicating pre-hire characteristics of an employee, wherein the pre-hire characteristics are available before hiring the employee and are collected electronically from the employee;

selecting a set of output parameters indicating post-hire outcomes available after hiring the employee; and

15   training a neural network with the input and output parameters.

14.   The method of claim 13 further comprising:

choosing a set of one or more candidate characteristics, wherein the characteristics indicate data available before hiring an employee;

20   testing effectiveness of the candidate characteristics in predicting the post-hire characteristics; and

responsive to determining the candidate information is effective, incorporating the candidate information into the model.

15. A method for constructing an artificial intelligence-based employment selection process based on pre-hire information comprising personal employee characteristics and post-hire information comprising employee job performance observation information, the method comprising:

5   generating a plurality of predictive artificial intelligence models based on the pre-hire and post-hire information, wherein at least two of the artificial intelligence models are of different types;

testing effectiveness of the models to select an effective model; and

applying the effective model to predict post-hire information not yet observed.

10

16. The method of claim 15 wherein at least one of the models is a neural network.

17. The method of claim 16 wherein at least one of the models is an expert

15 system.

18. The method of claim 15 wherein at least one of the models is a fuzzy logic system.

20   19. The method of claim 15 wherein at least one of the models is an information theoretic model.

20. The method of claim 15 wherein at least one of the models is a neuro-fuzzy model.

25

21. The method of claim 15 further comprising:

identifying at least one of the models as exhibiting impermissible bias; and

avoiding use of the models exhibiting impermissible bias.

- 64 -

22.   The method of claim 21 wherein the impermissible bias is against a protected group of persons.

23.   A computer-implemented method of refining an artificial-intelligence based employee performance selection system, the method comprising:

collecting information via an electronic device presenting a set of questions to employment candidates, wherein the questions are stored in a computer-readable medium;

testing effectiveness of at least one of the questions in predicting the post-hire information; and

responsive to determining the question is ineffective, deleting the question from the computer-readable medium.

24.   The method of claim 23 wherein effectiveness comprises predictiveness tested based on information theoretic techniques.

25.   A computer-readable medium comprising a predictive model, the model comprising:

inputs for accepting one or more characteristics based on pre-hire information for a job applicant;

one or more predictive outputs indicating one or more predicted job effectiveness criteria based on the inputs,

wherein the predictive model is an artificial intelligence-based model constructed from pre-hire data electronically collected from a plurality of employees and post-hire data, and the model generates its predictive outputs based on the similarity of the inputs to pre-hire data collected for the plurality of employees and their respective post-hire data.

26.   The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating a rank for the job applicant.

27.   The computer-readable medium of claim 26 wherein the rank is relative to other applicants.

28.   The computer-readable medium of claim 26 wherein the rank is relative to
5   the plurality of employees.

29.   The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating probability of group membership for the job applicant.
10

30.   The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating predicted tenure for the job applicant.

31.   The computer-readable medium of claim 25 wherein the predictive model
15   comprises a predictive output indicating predicted tenure for the job applicant.

32.   The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating predicted number of accidents for the job applicant.
20

33.   The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating whether the applicant will be involuntarily terminated.

25   34.   The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating whether the applicant will be eligible for rehire after termination.

35. A computer-readable medium comprising a refined predictive model, the model comprising:

inputs for accepting one or more characteristics based on pre-hire information for a job applicant;

5   one or more predictive outputs indicating one or more predicted job effectiveness criteria based on the inputs,

wherein the predictive model is constructed from pre-hire data electronically collected from a plurality of employees and post-hire data, wherein the pre-hire data is based on a question set refined by having identified and removed one or more questions

10   as ineffective.

36. The computer-readable medium of claim 35 wherein the ineffective questions are identified via an information transfer technique.

15   37. The computer-readable medium of claim 35 wherein the model is an artificial intelligence-based model.